

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

Baorong Lum, et al.,

Case No. 3:05CV7191

Plaintiff

v.

ORDER

Mercedes Benz, UNITED STATES, L.L.C., et al.,

Defendant

This is a products liability case in which the defendant, Mercedes Benz, U.S.A. has filed motions in limine seeking to exclude testimony by two of plaintiffs' experts about any defect in an airbag which plaintiff claims malfunctioned, causing severe burns to her left hand. [Docs. 62, 63]. For the reasons that follow, the motions shall be granted.

Baorong Lum ["plaintiff"] was driving a 1991 Mercedes automobile. She collided head-on with another vehicle. The airbag deployed, operating properly, at least to the extent that it restrained plaintiff and prevented more serious injuries than those she received in the collision.

When an airbag is operating properly, a chemical reaction, triggered by the impact of a collision, creates gases that inflate the airbag. The gases pass through twenty-four ports into the bag, causing it to expand fully. A filtration system is designed to keep any chemical residue from the reaction, except for residue of microscopic size, from entering the bag.

If the system functions as designed, neither hot gases nor hazardous chemical particulates escape from the bag, and neither come in contact with the vehicle's occupants. Because the heat generated by the chemical reaction is intense, the owner's manual warns against touching the inflator, which is contained within the steering column, after deployment.

The gravamen of plaintiffs' suit is that, in the fifteen to thirty-five milliseconds in which the airbag deployed, it malfunctioned. The malfunction, plaintiff alleges, released a pencil-thin stream of hot gases and/or chemical particulates which burned through the fabric of the bag and contacted her hand. This, she claims, caused a severe thermal or chemical burn, or a burn from both the extreme heat of and caustic chemicals in the gas/particulate stream.

Plaintiff retained two liability experts, Dr. A.L. Baxley and Gary Derian. According to them, the injury to Ms. Lum's hand occurred when the hot gas/particulate stream burned through the nylon fabric of the airbag and came in contact with plaintiff's hand. The release of the gas/particulate stream was, they assert, in turn caused by the failure of airbag's inflator to perform as designed

Plaintiff's experts are unable to state with specificity just what the nature of the alleged malfunction was, though they describe two alternatives. One is that the gases were, due to clogging of some of the ports, concentrated into a narrow, intensely hot stream.

Alternatively, the experts suggest that the inflator's filtration system may have failed, so that particulates of caustic chemicals, of a size large enough to cause chemical burns, entered the bag, passed through the hole in its fabric, and came into contact with plaintiff's hand.¹

Just as the plaintiff's experts cannot describe the actual nature of source of the burn – i.e., only thermal, from hot gases, only chemical, from chemical residue, or from a combination of both the heat of the gases and caustic composition of residue – the plaintiffs' experts are unable to render a specific opinion as to how the inflator malfunctioned.

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There is no dispute that, after the accident, polymer residue was observed on one of the inflator's portals. Plaintiff initially pointed to that residue as evidence of blockage of the ports. Later investigation has determined that the only source of that residue was from an inflator component destroyed during deployment. The polymer residue did not affect the flow of gas into the bag.

In other words, plaintiffs' experts cannot state that some number of the gas expulsion ports were clogged or something specific went wrong with the filters. Instead, they state, in effect, that the inflator produced a stream of hot gases/caustic particulates, burning the plaintiff's hand.

The defendant, through its experts [whose opinions plaintiff has challenged by her own motions in limine], asserts that the plaintiff's hand moved – probably involuntarily, as plaintiff's head hit the windshield – and came in contact with the still hot inflator inside the steering column.²

Defendant challenges the qualifications of plaintiff's experts, their failure to use essential and available methods to arrive at and verify their conclusions, and the reliability of those conclusions. Because I agree that the defendant's assertions about the experts' failure to use appropriate and prerequisite methods in arriving at and verifying their conclusions, the defendant's motions in limine must be granted.³

Discussion

Rule 702 of the Federal Rules of Evidence governs the admissibility of expert testimony. The Supreme Court prescribed guidelines for determining the admissibility of testimony under Rule 702 in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). Though the Court's

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Among other challenges to this version, as offered by the defendant and its experts, plaintiff contends that it would have been physically impossible for plaintiff, without using both her hands, to cause her left hand to penetrate the steering column and come in contact with the inflator. Because plaintiff has the burden of proof on the issue of defect and causation, it is not necessary to consider her motions in limine or determine whether they are well-taken.

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Plaintiff objects to the motions on the basis that they are disguised motions for summary judgment, and as such, untimely. I disagree: the fact that a motion in limine, if granted, makes it impossible for a plaintiff to meet her burden as to one or more elements of her claim does not make a pretrial *in limine* challenge improper.

opinion was limited in scope to “scientific” knowledge, the Court expanded that scope to technical knowledge, such as that at issue in this case, in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).

Together, these cases require, *inter alia*, that an expert’s conclusions be reached by scientific or technological methods that enable the trier of fact to find those conclusions to be reliable. As the Court stated in *Daubert*:

The adjective “scientific” implies a grounding in the methods and procedures of science. Similarly, the word “knowledge” connotes more than subjective belief or unsupported speculation. The term applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truths on good grounds. Of course, it would be unreasonable to conclude that the subject of scientific testimony must be “known” to a certainty; arguably, there are no certainties in science. Indeed scientists do not assert that they know what is immutably “true”- they are committed to searching for new, temporary theories to explain, as best they can, phenomena. Science [thus] . . . represents a process for proposing and refining theoretical explanations about the world that are subject to further testing and refinement. But in order to qualify as “scientific knowledge” an inference or assertion must be derived by the scientific method. Proposed testimony must be supported by appropriate validation - i.e., “good grounds,” based on what is known.

509 U.S. at 590 (internal quotation marks and citations omitted).

In testing an expert’s opinion against this requirement, district courts “are not to be concerned with the reliability of the conclusions generated by valid methods, principles and reasoning.” *United States v. Bonds*, 12 F.3d 540, 556 (6th Cir. 1993). Described by *Daubert* as a “gatekeeper,” the judge is, rather, to determine “whether the reasoning or methodology . . . is scientifically valid and . . . whether that reasoning or methodology properly can be applied to the facts in issue.” 509 U.S. at 592-93.

Of greatest pertinence to this case, “a key question to be answered” about the expert’s methods and opinions, *Daubert* states, is “whether [they] can be (and [have] been) tested.” *Id.* at 592. The opinions proffered by plaintiffs’ experts fail this cornerstone test: no testing undergirds the

opinions proffered by the plaintiffs' experts, and nothing offered in lieu of tests provides the necessary assurance that the experts' method of analysis has led to reliable results.

To be sure, the experts reviewed extensive information, reports, and photographs of the accident, airbag, and plaintiff's injury. They also inspected the inflator that they contend malfunctioned and reports about and of tests conducted on other airbags.

But they did not test their conclusions in a way that is essential before their opinions can be presented to the jury.

The plaintiff seeks to excuse away the lack of pertinent testing by asserting that no testing of the same make and model of airbag – no matter how numerous or extensive such testing might have been – could have given any insight into what went wrong with this airbag, or how and why it went wrong. This is so, plaintiff contends, because it is not probable that another of these devices would malfunction in the way that this one did.

This assertion has some initial, superficial appeal: there is no dispute that the defendant knows of no alleged malfunction of the sort being asserted by plaintiff in this case. Because this incident is unique, there is, plaintiff thus contends, simply no likelihood of replication – even if thousands of the same type of device were deployed.

But testing by exact replication – i.e., by inflating off-the-shelf duplicates – was not the only option available to plaintiff's experts. Defendant argues, and plaintiff has not refuted, that testing could and should have been undertaken by altering inflators on a relatively small number of devices to determine whether, as altered, inflators produce a hot gas/chemical particulate stream, and, if so, such stream was able to burn through the bag's fabric.

Plaintiff has no answer to the defendant's contention that her experts' conclusions could have been tested by disassembling duplicate inflators, clogging various exhaust ports, reinstalling the inflators, deploying the airbags, and seeing what happens.

If testing of this sort caused the fabric to be penetrated by a gas/particulate stream, plaintiff would have shown that her experts' opinions had a reliable basis.

Plaintiff has not shown that such testing could not have been undertaken. Her negative evidence – her challenge to the admissibility of the defendant's experts' opinions that plaintiff's hand was burned by contact with the still-hot inflator is not enough to get plaintiff to the jury.⁴

Plaintiff seeks, in lieu of testing, to find support for her experts' opinions in the other things that they did. Among these, principally, was a review of reports and other materials which,

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There are, in any event, serious problems with the negative "testing" conducted by Dr. Baxley, which, he contends, shows that defendant's "hand on the hot inflator" theory is untenable.

Baxley conducted two "tests" in an effort to disprove the defendant's theory. His first test involved making an ink pad impression on a sheet of paper of his knuckles. The other involved an effort by his wife, at his direction, to place her fisted hand against the inflator.

In his "ink pad" test, Dr. Baxley compared the resulting impression with the melted area on the airbag in this case. The two – area of fabric melt and knuckle impression – did not match. Thus, Baxley concluded that contact between plaintiff's hand and the inflator could not have caused the melting.

Among other problems with this approach, observation, and conclusion is the fact that a flat sheet of paper is not the same as a deployed, collapsing airbag subject to external pressure and being pressed against a hot contoured component. There is no "fit" between the putative foundation and the proposition sought to be supported. *See generally General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) ("A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.").

Dr. Baxley's "surrogate test" was equally unscientific and non-probative. This subjective, uncontrolled, and potentially self-fulfilling "test" adds nothing to the foundation for Dr. Baxley's theory that a gas/particulate stream burned its way through the fabric and onto plaintiff's hand.

according to the plaintiff, provide an adequate foundation for the experts' testimony about penetration of the bag's fabric by a gas/particulate stream.

Defendant argues, and I agree, that none of these materials fills in the gaps left by the failure to conduct testing.

Among these materials was a brochure produced by DuPont, which manufactured the airbag's nylon fabric. Read most favorably for the plaintiff, that brochure states that defects in an inflator can cause a burn-through of the fabric.⁵ There is, however, no indication as to what, if any testing DuPont did to come to the conclusion that inflator malfunctions can cause burn-through. Even if such testing were done, we do not know whether it involved airbags of the type in this case, how the testing was conducted, how it came to whatever conclusions were reached, or what otherwise happened during the course of such tests.

All that the DuPont materials tell us – and plaintiff's experts – is that the fabric can, under unspecified and undisclosed circumstances, be burnt through. There is no "fit" between that statement and the allegations against the defendant in this case.

The experts also relied on patent applications relating to airbags manufactured by the company that supplied the airbag in this case. Those applications do not, however, provide a basis for an opinion about the fact or cause of the alleged malfunction. Instead, they are pertinent to the design of the device, not how its operation might be affected by a manufacturing or other defect.

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The DuPont brochure also states that a burn-through can be caused by defects in the fabric, or use of fabric that is insufficiently thick, resistant, or constructed to withstand the heat to which it is exposed. The purpose of the brochure appears to have been to promote the use of DuPont's product, as was done in the airbag in this case.

Were this a design defect case, this material might have some “fit” with an expert’s opinion about defective design. But this is not a design defect case. Thus, the patent-related materials cannot provide a foundation for an opinion that the inflator malfunctioned, much less how and why it may have done so.

The experts also looked to reports obtained from the National Automotive Sampling System database for support for their conclusions. One set of materials consisted of eighty-six reports about burns to airbags. None of those reports involved airbags of the same model and type as the device in this case. Only one involved a Mercedes airbag – in a 2000 model vehicle. Defendant contends, and plaintiff does not contest, that the reports relate to devices of different design than the device here.⁶

There is no dispute in this case that the bag was burned. At issue here is not that burn occurred; it is how and why it occurred. Thus, reports about burns in other bags are not relevant, absent a showing of some “fit” between what caused the burns in those incidents and the opinions of plaintiff’s experts as to what happened here.

Another set of six reports relates to Mercedes airbags. None of those incidents resulted in burns to an occupant.

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Plaintiff seeks support for the pertinence of these materials in statements by a defense expert, Jeffrey Pearson. Pearson stated, when asked by plaintiff’s counsel if “burn degradation” can “be an indication of component failure,” that, “It certainly can.” When asked specifically whether “burn holes in the bag, in the cushion can be an indication of a defect in the inflator,” Pearson answered, “In some circumstances, they might be, yes.”

These general acknowledgments that airbags can fail under unspecified conditions and inflators can be defective “in some circumstances” hardly stand as proof about what happened in this case. Not expressed as formal opinions, based on actual or assumed facts having some “fit” with facts having some connection to this case, these statements do not even partially bridge the foundational gap in the opinions of plaintiff’s experts.

The fact that something may have happened in other accidents involving Mercedes vehicles does not provide any support for the opinion that the burn-through occurred as the experts assert.

There is, therefore, no showing by the plaintiff that her experts used reliable methods to come to their opinions about a malfunction by the inflator. Testing could have been, but was not conducted to learn whether, as the experts assert, clogging of exhaust ports might result in emission of a gas/particulate stream that could penetrate the bag's fabric and cause the burn she suffered. The other materials considered by the experts do not have sufficient "fit" with the facts of this case to permit the experts to take the place of testing as a means of verifying their hypothesis and conclusions.

Conclusion

For the foregoing reasons, I conclude that the opinions of plaintiff's liability experts are insufficiently based on a reliable methodology.

It is, therefore,

ORDERED THAT defendant's motions in limine nos. 2 and 3 be, and the same hereby are granted.

So ordered.

s/James G. Carr
James G. Carr
Chief Judge